

CLAIMS

What is claimed is:

- 5 1. An apparatus with a combination of a point light source and a single lens, comprising:
 - a point light source;
 - a photodetector; and
 - a lens, positioned in the same side of said point light source and
- 10 said photodetector in order that a light emitting from said point light source is focused onto a target area of an object through said lens, and a reflected light from said target area of said object is focused onto said photodetector through said lens.
- 15 2. The apparatus of claim 1, wherein further comprising a holder for holding said point light source at a first end thereof and holding said photodetector at a second end thereof.
- 20 3. The apparatus of claim 1, wherein said object is placed at a focal position of said lens.
4. The apparatus of claim 1, wherein said point light source includes a light emitting diode.
- 25 5. The apparatus of claim 1, wherein said photodetector generates a response current in response to said reflected light from said target area of said object.

6. The apparatus of claim 5, wherein said photodetector is selected from a group consisting of a photodiode, a charge-coupled device and a complex metal oxide semiconductor sensor.

5 7. The apparatus of claim 1, wherein said object includes a test strip having a light-absorbing area occurring in response to a specific component of a tested solution contacting therewith and capable of absorbing said light emitting from said point light source.

10 8. The apparatus of claim 7, wherein said point light source radiates a light with a first wavelength and a light with a second wavelength, said light with the first wavelength absorbed by said tested solution contained in said light-absorbing area of said test strip, wherein a sampling amount of said tested solution is determined in accordance
15 with the reflectance of said light with the first wavelength from said light-absorbing area, and said light with the second wavelength absorbed by said light-absorbing area occurring in response to said specific component of said tested solution, wherein a content of said specific component is determined in accordance with the reflectance of
20 said light with the second wavelength from said light-absorbing area.

9. The apparatus of claim 7, wherein said specific component of said tested solution to be detected depends on an enzyme system contained in said test strip.

25 10. The apparatus of claim 9, wherein said test strip is used for monitoring a concentration of glucose in a blood sample.

11. The apparatus of claim 9, wherein said test strip is used for monitoring a concentration of cholesterol in a blood sample.

12. An apparatus with a combination of a point light source and
5 a single lens, comprising:

a holder;

a point light source, disposed at a first end of said holder;

a photodetector, disposed at a second end of said holder, said
first end and said second end formed on the same side of said holder;

10 and

a lens, disposed at the same side of said point light source and
said photodetector in order that a light emitting from said point light
source through said lens is focused onto an target area of an object
placed at a focal position of said lens, and a reflected light from said
15 target area of said object is focused onto said photodetector through said
lens.

13. The apparatus of claim 12, wherein said point light source
includes a light emitting diode.

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14. The apparatus of claim 12, wherein said photodetector
generates a response current in response to said reflected light from said
target area of said object.

25 15. The apparatus of claim 14, wherein said photodetector is
selected from a group consisting of a photodiode, a charge-coupled
device and a complex metal oxide semiconductor sensor.

16. The apparatus of claim 12, wherein said object includes a test strip having a light-absorbing area occurring in response to a specific component of a tested solution contacting therewith and capable of absorbing said light emitting from said point light source.

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17. The apparatus of claim 16, wherein said point light source radiates a light with a first wavelength and a light with a second wavelength, said light with the first wavelength absorbed by said tested solution contained in said light-absorbing area of said test strip, wherein
10 a sampling amount of said tested solution is determined in accordance with the reflectance of said light with the first wavelength from said light-absorbing area, and said light with the second wavelength absorbed by said light-absorbing area occurring in response to said specific component of said tested solution, wherein a content of said
15 specific component is determined in accordance with the reflectance of said light with the second wavelength from said light-absorbing area.

18. The apparatus of claim 16, wherein said specific component of said tested solution to be detected depends on an enzyme system
20 contained in said test strip.

19. The apparatus of claim 18, wherein said test strip is used for monitoring a concentration of glucose in a blood sample.

25 20. The apparatus of claim 18, wherein said test strip is used for monitoring a concentration of cholesterol in a blood sample.